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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,088	04/19/2004	Kuang-Kai Liu	9606	1872

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EXAMINER
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BOGART, MICHAEL G

ART UNIT	PAPER NUMBER
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3761

MAIL DATE	DELIVERY MODE
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03/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,088	<b>Applicant(s)</b> LIU, KUANG-KAI	
	<b>Examiner</b> MICHAEL G. BOGART	<b>Art Unit</b> 3761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 January 2008 has been entered.

### ***Claim Rejections – 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1, 2 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello (US 4,931,051) in view of Pierce and Townsend (US 4,287,153).

Regarding claims 1 and 8, Castello teaches a diaper having a backsheet (190), a topsheet (170) and an absorbent core (180). Castello teaches a color wetness indicator printed onto a surface of a backsheet of the diaper (col. 2, lines 30-62). Castello further teaches a coating or varnish over the wetness indicator to prevent premature activation (col. 5, lines 14-21). Castello uses hydratable salts which must be preferably combined with binder to reduce toxicity and any contact between the salts and a wearer's skin avoided (abstract; col. 3, lines 21-30). Castello's preferred hydratable salt is copper sulfate, which is a skin irritant (col. 3, lines 61-65)(see, e.g., International Resources Inc., *Material Safety Data Sheet, Copper Sulfate*, January 2001, [www.iri-us.com/msds/copper.html](http://www.iri-us.com/msds/copper.html)).

Castello does not expressly disclose that the color wetness indicator is hydrolyzable and under goes a hydrolytic reaction upon wetting.

Townsend teaches an absorbent article (1) having a water indicator graphics (2) made of a latent color pigment material that undergoes a hydrolytic reaction in response to urine or saline water such that the graphic becomes visible (abstract; page 4, lines 13-65; page 9 line 49-page 11, line 19; page 12, lines 1-52) Townsend's indicator uses water-insoluble polymeric ion exchanger and a water-insoluble polymeric exchanged-ion indicator, which don't have the same toxicity issues as Castello's hydratable salts. Furthermore, Townsend's indicator is non-leachable.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute the graphics compositions of Pierce for use as the wetness indicator material in the

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absorbent articles of Castello in order to provide a material that is known to be effective for that purpose and which lacks the toxicity of some hydratable salts.

Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. § 103(a). *Ex Parte Smith*, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007)(citing *KSR v. Teleflex*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Accordingly, Applicant claims a combination that only unites old elements with no change in the respective functions of those old elements, and the combination of those elements yields predictable results; absent persuasive evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. § 103(a). *Ex Parte Smith*, 83 USPQ.2d at 1518-19 (BPAI, 2007)(citing *KSR*, 127 S.Ct. at 1740, 82 USPQ2d at 1396). Accordingly, since the applicant[s] have submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. § 103(a) because it is no more than the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement.

Regarding claims 2, Townsend teaches the use of a liquid carrier for the dye/pigment and a solvent (col. 7, lines 1-6). Townsend does not disclose the % by weight of these materials.

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such

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concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In the instant case, increasing the amount of dye would increase the visibility of an image formed by the dye.

Claims 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Timmons *et al.* (US 4,022,211; hereinafter “Timmons”).

Castello in view of Townsend do not disclose alcohol as a solvent.

Timmons discloses the use of alcohol as a solvent.

At the time of the invention it would have been obvious to one of ordinary skill in the art to select the alcohol of Timmons as a solvent in the device of Castello and Townsend in order to provide a material that is known in the art to be suitable for that purpose.

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend in view of Schlein *et al.* (US 5,458,590 A; hereinafter “Schlein”).

Castello and Townsend do not teach the claimed acetate(s).

Schlein teaches an ink blend comprising n-propyl acetate (col. 2, lines 44-67) or isopropyl alcohol (col. 5, lines 27-45) which improves crockfastness.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the acetate of Schleinz in the wetness indicator of Castello and Townsend in order to provide improved adhesion of the ink to the substrate.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend in view of Ito *et al.* (US 5,595,754 A; hereinafter “Ito”).

Castello and Townsend do not teach the claimed coating materials.

Ito teaches absorbent color-changing sheets which use polyamides as resins in an impermeable layer (col. 6, lines 33 and 34).

At the time of the invention it would have been obvious to one of ordinary skill in the art to select the polyamide construction of Ito to use as an impermeable layer in the device of Castello and Townsend in order to provide a construction known in the art to be suitable for this purpose. MPEP § 2144.07.

Claims 7 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend in view of Olson *et al.* (WO 00/76442 A1; hereinafter “Olson”).

Castello and Townsend do not teach a wetness indicator printed on an inner surface.

Olson teaches an absorbent article having a changing wetness indicator printed on an inner surface of a backsheet (page 13, lines 8-12).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the graphic on the inner surface as taught by Olson with the absorbent article of Castello and Townsend in order to provide partial protection from exterior humidity.

Claims 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend as in view of Polansky *et al.* (US 4,249,532; hereinafter “Polansky”).

Castello and Townsend do not teach varnish disposed beneath the color responsive composition.

Polansky teaches a seal coat underlying a graphic design.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to provide a seal coat beneath a graphic as taught by Polansky in combination with the wetness indicating article of Castello and Townsend in order to provide additional means of preventing premature activation.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend in view of Perrault *et al.* (US 4,717,378; hereinafter “Perrault”).

Castello and Townsend do not teach the specific type of dye.

Perrault teaches a method for detecting dehydration of a hydrogel which includes using D&C Red #27 (col. 2, lines 19-25). This particular dye is skin-contact grade.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the indicator dye of Perrault in the device of Castello and Townsend in order to provide a substance known to be effective for that purpose and being of skin contact grade.

Claims 14 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Townsend in view of Howell (US 5,389,093).

Regarding claims 14 and 16, Castello and Pierce do not disclose directly color composition that forms a carboxylic acid upon wetting.

Howell teaches a wetness indicating diaper that uses a thermochromatic ink that changes color in response to the change in temperature triggered by the presence of urine. The thermochromatic ink comprises a fatty acid. Fatty acids are a type of carboxylic acid. (see



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*Hawley's Condensed Dictionary*, 14<sup>th</sup> edition, 2002). The thermochromatic ink allows the diaper to be reusable, thus avoiding waste and cost associated with disposable diapers (abstract; col. 6, lines 13-29).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the thermochromatic dye of Howell in the absorbent article of Castello and Townsend in order to allow the article to be reusable and thus more economical than a disposable article.

Claims 12 and 15 rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello, Townsend, Olson and Howell in view of Pierce *et al.* (WO 00/76438 A2; hereinafter "Pierce").

Castello in view of Townsend, Olson and Powell do not expressly disclose a breathable backsheet.

Pierce teaches a breathable backsheet (40)(page 16, line 17-page 17, line 3). This makes the absorbent article more comfortable to wear, touch.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the breathable backsheet of Pierce with the absorbent article of Castello, Townsend, Olson and Howell in order to provide for user comfort.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bogart whose telephone number is (571) 272-4933.

In the event the examiner is not available, the Examiner's supervisor, Tatyana Zalukaeva may be reached at phone number (571) 272-1115. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for formal communications. For informal communications, the direct fax to the Examiner is (571) 273-4933.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael G. Bogart/

Examiner, Art Unit 3761

/Tatyana Zalukaeva/

Supervisory Patent Examiner, Art Unit 3761